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CERTIFICATION UNDER 37 C.F.R. 1.10

Enclosed for filing is the application for United States Letters Patent of BRUCE EDWARD ZIEGLER, DANIEL CHRISTOPHER WIESCHHAUS, ANTHONY EARL JOHNSON, and IGOR MIKHAILOVICH DVOEGLAZOV Attorney Docket No. 30602, entitled COMPUTER PROGRAM AND METHOD FOR MODIFYING DATA TABLES IN A TELECOMMUNICATIONS SWITCH, including: **Transmittal, Specification, Microfiche Appendix; Claims, Abstract, 8 sheets informal drawings, Combined Declaration and Power of Attorney, $710.00 filing fee, Assignment Cover Sheet, Assignment, $40.00 recordation fee, and return card.**

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"Express Mail" mailing number

October 3, 2000
Date of Deposit

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Katie Kurfman
Name of person mailing

Katie Kurfman
Signature of person mailing

ASSISTANT COMMISSIONER OF PATENTS
Box: New Application
Washington, D.C. 20231

Docket No. 30602

Date October 3, 2000

Sir:

10/03/00 Transmitted herewith for filing under 35 U.S.C. 111 and 37. C.F.R. 1.53 is the patent application of:

INVENTOR(S): BRUCE EDWARD ZIEGLER, DANIEL CHRISTOPHER WIESCHHAUS, ANTHONY EARL JOHNSON, and IGOR MIKHAILOVICH DVOEGLAZOV

FOR: COMPUTER PROGRAM AND METHOD FOR MODIFYING DATA TABLES IN A TELECOMMUNICATIONS SWITCH

Enclosed are:

X Certificate of Mailing with Express Mail Mailing Label No. EL618532505US

X 8 sheets of drawing(s)

X Combined Declaration and Power of Attorney

X An Assignment of the invention to SPRINT SPECTRUM, L.P. together with the recording fee of $40.00.

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___ The issue fee set in 37 CFR 1.18 at or before the mailing of the Notice of Allowance, pursuant to 37 CFR 1.311(f).

X Any fees under 37 CFR 1.16 for presentation of extra claims.

By _____
Thomas B. Luebbering, Reg. No. 37,874

23589
PATENT TRADEMARK OFFICE

COMPUTER PROGRAM AND METHOD FOR MODIFYING DATA TABLES IN A TELECOMMUNICATIONS SWITCH

MICROFICHE SOURCE CODE APPENDIX

A Microfiche Appendix containing source code of computer programs of the present invention is appended hereto as 5 sheets of microfiche containing a total of 306 frames and is hereby incorporated by reference into this application as if fully set forth herein.

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The present invention relates to telecommunications switches. More particularly, the invention relates to a computer program and method for modifying data tables in voice-over-i.p. local routing switches.

2. DESCRIPTION OF THE PRIOR ART

Telecommunications companies are beginning to offer broadband home and business communications systems that integrate a number of communications services in one package. For example, Sprint Communications Company, L.P. has recently introduced its ION broadband communications service that carries voice, data, and video over one connection. The service permits subscribers to make telephone calls, send and receive faxes, and use the Internet simultaneously.

To integrate voice and data over the same connection, broadband services require the use of voice-over-i.p. (Internet protocol) local routing switches for the voice component of the services. Two examples of voice-over-i.p. local routing switches are the GTE Service Manager Switch and the Telcordia Service Gateway Service Manager Switch.

Voice-over-i.p. local routing switches typically support a number of data tables that include customer information, routing data, and network architecture information. Because broadband communications services are relatively new and rapidly growing, the information in these data tables must be frequently supplemented, edited, or otherwise modified. Unfortunately, no interfaces currently exist that permit an administrator such as a translations specialist to directly access and modify the tables in a voice-over-i.p. local routing switch. Telcordia has an interface for its Service

Manager Switch that permits an administrator to manipulate data at a service level, but the interface does not permit direct access to information in data tables. This is a disadvantage because, without direct access to the data tables in a voice-over-i.p. local routing switch, it is difficult and time-consuming to load large amounts of incremental updates. Moreover, if an administrator wishes to add a new service using the Telcordia interface, the administrator first needs to modify the interface to support the new service, a task that requires special programming knowledge of the interface and the switch.

SUMMARY OF THE INVENTION

The present invention solves the above-described problems and provides a distinct advance in the art of interfaces for voice-over-i.p. local routing switches. More particularly, the present invention provides a computer program and method that allows direct access and modification of the data tables in switches so that administrators can more easily edit, supplement, or otherwise modify data therein.

The method and computer program of the present invention permits an administrator to view a list of voice-over-i.p. local routing switches; select a switch from the list; view a list of data tables for the selected switch; select a data table from the list; search for and retrieve information in the data table; modify the information; and then upload the modifications to the switch by sending the modifications to an interface on the switch.

The present invention allows manipulation of data at a table level, rather than at a service level. At a table level, an administrator with sufficient understanding of the business logic of a voice-over-i.p. local routing switch can make updates quickly and easily. In addition, the table-level interface of the present invention supports mass loading of data into a switch, which cannot be easily or quickly done at a service level. With the present invention, an administrator may even add a new service to a switch by simply updating the necessary tables directly, without requiring complicated and time-consuming changes to the interface itself.

The present invention uses a factory server to access data on a voice-over-i.p. local routing switch. An applet sends a logical name based on a server table name to the factory server. The factory server creates a remote object which is used by the applet to obtain an address to a table in the switch. The factory server is a stand-

alone component and therefore can be used by any application to create a remote object, including CORBA objects.

The present invention also includes a table wrapper code generator component. Any time a new table is added to a voice-over-i.p. local routing switch, it requires the creation of a view to interpret data and an interface to manipulate the view. The view structure and interface definition language (IDL) structure are passed to the table wrapper code generator, which then creates the code to map the view elements to the IDL elements. The code generator automates what is normally a manual process and therefore improves the accuracy and speed of table additions, particularly when multiple tables are modified.

These and other important aspects of the present invention are described more fully in the detailed description below.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

A preferred embodiment of the present invention is described in detail below with reference to the attached drawing figures, wherein:

Fig. 1 is a schematic diagram of computer and telecommunications equipment that may be used to implement certain aspects of the present invention.

Fig. 2 is a flow diagram broadly depicting certain steps of the present invention.

Fig. 3 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 4 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 5 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 6 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 7 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 8 is a screen shot of one of the screens presented by the computer program of the present invention.

Fig. 9 is a screen shot of one of the screens presented by the computer program of the present invention.

The drawing figures do not limit the present invention to the specific embodiments disclosed and described herein. The drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As generally depicted in Fig. 1, the present invention provides an interface to one or more voice-over-i.p. local routing switches 10 (often referred to herein as merely "switch" or "switches") such as the Service Manager Switch manufactured by GTE or the Service Gateway Service Manager Switch manufactured by Telcordia. Each switch includes a plurality of Oracle data tables in a database or file 12 that contain customer information, routing data, network architecture information, and other data. For example, the data tables may include NPA/NXX or originating area information and information on existing trunk groups and trunk circuits. Each switch also includes an IDL interface 14 that permits access to certain information in the data tables and that permits uploading of information to the switch.

The interface of the present invention can be implemented in hardware, software, firmware, or a combination thereof. In a preferred embodiment, however, the interface is implemented with software that operates a server-type computer 16 and one or more user computers 18 coupled with the server computer 16. The software and equipment illustrated and described herein are merely examples of hardware and software that may be used to implement a preferred embodiment of the present invention and may be replaced with other software and computer equipment without departing from the scope of the present invention.

The computer programs of the present invention operate the server computer 16 and the user computers 18 as described herein. The computer programs each preferably comprise an ordered listing of executable instructions for implementing logical functions in the server computer 16, the user computers 18, and the switch 10. The computer programs can be embodied in any computer-readable medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer-based system, processor-containing system, or other system that can fetch

the instructions from the instruction execution system, apparatus, or device, and execute the instructions. In the context of this application, a "computer-readable medium" can be any means that can contain, store, communicate, propagate or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer-readable medium can be, for example, but not limited to, an electronic, magnetic, optical, electro-magnetic, infrared, wireless, or semi-conductor system, apparatus, device, or propagation medium. More specific, although not inclusive, examples of the computer-readable medium would include the following: an electrical connection having one or more wires, a portable computer diskette, a random access memory (RAM), a read-only memory (ROM), an erasable, programmable, read-only memory (EPROM or Flash memory), an optical fiber, and a portable compact disk read-only memory (CDROM). The computer-readable medium could even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via for instance, optical scanning of the paper or other medium, then compiled, interpreted, or otherwise processed in a suitable manner, if necessary, and then stored in a computer memory.

The server computer 16 is programmed to send requests and upload modifications to the switch 10 via the switch's IDL interface 14 and to retrieve information from the Oracle data tables 12 via a similar interface. The server computer 16 may be any conventional computing device such as a Dell 6300 series computer.

The server computer 16 is programmed in accordance with the present invention with a series of HTML pages that may be accessed by one of the user computers 18 with a browser to implement certain steps of the invention. The server computer 16 is also programmed with a Java applet that is served to the user computers 18 and launched by one or more of the HTML pages to perform certain aspects of the present invention as described below. Inside certain ones of the HTML pages are parameters that drive the behavior of the applet. For example, a parameter may be the location of a local oracle database containing information on several switches. By making this a parameter, the location can be changed without changing the Java code.

The server computer 16 runs a SQL engine for accessing information in the Oracles data tables 12. The server computer 16 is also programmed with a factory server and a table wrapper code generator as described in more detail below.

The user computers 18 are coupled with the server computer 16 by a communications network such as a local area network (LAN), a wide area network (WAN), an intranet, an extranet, or the Internet. Each user computer 18 permits an administrator, such as a member of a network translations group, to access the server computer 16 to add, delete, supplement, or otherwise modify information in the data tables of the switch 10 as described in more detail below. The user computers 18 may be any conventional computing devices such as personal computers manufactured by Dell.

Certain translation, subscription, and network configuration tasks may also be implemented with a server computer 22 and a user computer 24 that access the Oracle tables 12 through a service delivery platform (SDP) interface 26 of the switch 10 as illustrated in Fig. 1.

The general operation of the present invention is as follows. The applet and the HTML pages on the server computer 16 provide direct access to the Oracle data tables 12 in the switch 10. The applet presents a graphical user interface (GUI) to the user computers 18 that supports the activities required to add, update, delete, or otherwise modify data that is stored in the data tables. An administrator may operate one of the user computers 18 to access the server computer 16 with a browser and launch the HTML pages and the applet. The applet then permits the administrator to view a list of switches, select a switch, select a data table from the switch, search for information in the selected data table, modify the retrieved information, and then upload the changes to the switch.

The applet manages access to the SQL engine to obtain the requested information in the Oracle data tables 12. The applet also preferably performs a security check to ensure that the administrator has read and update authority for the application. The applet presents the retrieved information in an easy-to-read grid format or database on the screen of one of the user computers 18. The administrator may make changes while on line with the server computer 16 or may save the retrieved information to a file and perform changes to the file. When the administrator has completed making changes and/or modifications, the applet uploads the information to the switch 10 via the switch's IDL interface 14.

The flow chart of Fig. 2 shows the functionality and operation of a preferred implementation of the present invention in more detail. In this regard, some of the

blocks of the flow chart may represent a module segment or portion of code of the computer programs of the present invention which comprises one or more executable instructions for implementing the specified logical function or functions. In some alternative implementations, the functions noted in the various blocks may occur out of the order depicted in Fig. 2. For example, two blocks shown in succession in Fig. 2 may in fact be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order depending upon the functionality involved.

An administrator first operates a browser on one of the user computers 18 to access the server computer 16 and to open the applet as depicted in box 200. The applet then presents a log-in screen that prompts the administrator to enter a user name and a password as depicted in box 202.

The applet next retrieves and displays a list of voice-over-i.p. local routing switches that may be accessed with the interface as depicted in step 204. The list is displayed on the screen of the user computer 18 in a database or grid such as the one illustrated in Fig. 3. The switch list preferably includes a switch number column 28, a switch name column 30, and a switch version column 32 for indicating the version of software that the switch is currently running. The administrator may highlight and then click on any switch in the list and then activate a Connect button 34 in the lower lefthand corner of the screen.

Once the administrator has chosen a switch, the applet presents a screen such as the one illustrated in Fig. 4 that displays an Upload tab 36 that permits the administrator to upload information to the selected switch and a Table List tab 38 that lists all available data tables 12 that may be accessed in the selected switch. If the administrator selects the Table List tab 38, the applet retrieves and displays a screen with a list of all accessible data tables for the selected switch as depicted in box 206 of Fig. 2. An example of the screen is illustrated in Fig. 5. The administrator may then highlight one of the tables and activate a Get Selected Table button 40 to retrieve a "virtual" table of data from the selected data table as depicted in box 208. The applet then displays a screen such as the one illustrated in Fig. 6, which presents a list of key fields for the selected data table and a search column 42 that may be used to search for information or data within the data table as depicted in box 210.

The factory server is used to access data on the switch 10. The applet sends a logical name based on a server table name to the factory server. The factory

server creates a remote object which is used by the applet to obtain an address to a table in the switch. The factory server is a stand-alone component and therefore can be used by any application to create a remote object, including CORBA objects.

To perform a search, the administrator may enter search criteria in the search value column 42 and then click on a Search button 44 in the lower right-hand corner of the screen as illustrated in Fig. 7. The applet then searches the data table based on the search criteria and returns the information from the switch in a screen such as the one illustrated in Fig. 8. The retrieved information is preferably displayed in a spreadsheet -type format on the screen of the user computer. The information may be sorted by clicking on the field name of each column. Information that is retrieved from the switch may be saved to a text file by clicking on a Save to File button 46 located on the screen. The applet then prompts the administrator to enter a location and file name in which to save the information. An entire table may also be saved to a text file.

Once information has been retrieved from the switch 10, the information may be supplemented, deleted, or otherwise modified as depicted in box 212. The data may be modified while the administrator is on-line with the server computer 16 or may be modified in a separate text file 20. Once the administrator has finished making changes to the data, the changes and/or the file may be uploaded to the switch as depicted in box 214 using an upload screen such as the one depicted in Fig. 9. The changes are preferably uploaded to the switch via the switch's IDL interface 14 or similar interface. The applet preferably does not write information directly to the Oracle tables 12, but rather presents the information to the switch's interface so that the changes may be uploaded directly to the Oracle tables by the operator of the switch.

The table wrapper code generator is used for mapping view elements. Particularly, any time a new table is added to a switch 10, it requires the creation of a view to interpret data and an interface to manipulate the view. The view structure and interface definition language (IDL) structure are passed to the table wrapper code generator, which then creates the code to map the view elements to the IDL elements. The code generator automates what is normally a manual process and therefore improves the accuracy and speed of table additions, particularly when multiple tables are modified.

Although the invention has been described with reference to the preferred embodiment illustrated in the attached drawing figures, it is noted that equivalents may

be employed and substitutions made herein without departing from the scope of the invention as recited in the claims.

Having thus described the preferred embodiment of the invention, what is claimed as new and desired to be protected by Letters Patent includes the following:

5

CLAIMS:

1. A computer program stored on a computer-readable medium for directing a computer to act as an interface to a voice-over-i.p. local routing switch, the computer program comprising:

a code segment for permitting an administrator to select a voice-over-i.p. local routing switch;

a code segment for listing data tables in the voice-over-i.p. local routing switch;

a code segment for permitting the administrator to select one of the data tables;

a code segment for retrieving information from the selected data table and for displaying the information;

a code segment for permitting the administrator to make changes to the retrieved information; and

a code segment for sending changes made to the retrieved information to an interface on the voice-over-i.p. local routing switch so that the changes may be incorporated in the data table.

2. The computer program as set forth in claim 1, wherein the retrieved information is presented in logical tables that may be modified by the administrator.

3. The computer program as set forth in claim 2, wherein the administrator may make changes directly to one of the logical tables.

4. The computer program as set forth in claim 2, wherein the administrator may save a logical table to a file and perform changes to the file.

5. The computer program as set forth in claim 1, further including a code segment for listing a plurality of voice-over-i.p. local routing switches that may be selected by the administrator.

6. The computer program as set forth in claim 1, further including a code segment for permitting the administrator to search for information in the data table.

7. A method for modifying data tables contained in a voice-over-i.p. local routing switch, the method comprising the steps of:

selecting a voice-over-i.p. local routing switch from a list thereof displayed on a computer;

selecting a data table supported by the selected voice-over-i.p. local routing switch from a list thereof presented on the computer;

searching for information in the selected data table by entering search criteria in the computer;

modifying the information; and

sending the modifications to an interface on the voice-over-i.p. local routing switch using the computer so that the modifications may be incorporated in the data table.

8. The method as set forth in claim 7, wherein the information is presented in logical tables that may be modified by the administrator.

9. The method as set forth in claim 7, wherein the administrator may make changes directly to one of the logical tables.

10. The method as set forth in claim 7, wherein the administrator may save a logical table to a file and perform changes to the file.

11. A system for modifying data tables contained in a voice-over-i.p. local routing switch, the system comprising:

a server computer; and

a user computer;

the server computer being programmed to include -

a code segment for permitting an administrator to select a voice-over-i.p. local routing switch from a list thereof displayed on the user computer;

a code segment for listing data tables in the voice-over-i.p. local routing switch;

a code segment for permitting the administrator to select one of the data tables from a list thereof displayed on the user computer;

a code segment for retrieving information from the selected data table and for displaying the information on the user computer;

a code segment for permitting the administrator to make changes to the retrieved information; and

a code segment for sending changes made to the retrieved information to an interface on the voice-over-i.p. local routing switch so that the changes may be incorporated in the data table.

12. The system as set forth in claim 11, wherein the retrieved information is presented in logical tables that may be modified by the administrator.

13. The system as set forth in claim 11, wherein the administrator may make changes directly to one of the logical tables.

14. The system as set forth in claim 11, wherein the administrator may save a logical table to a file and perform changes to the file.

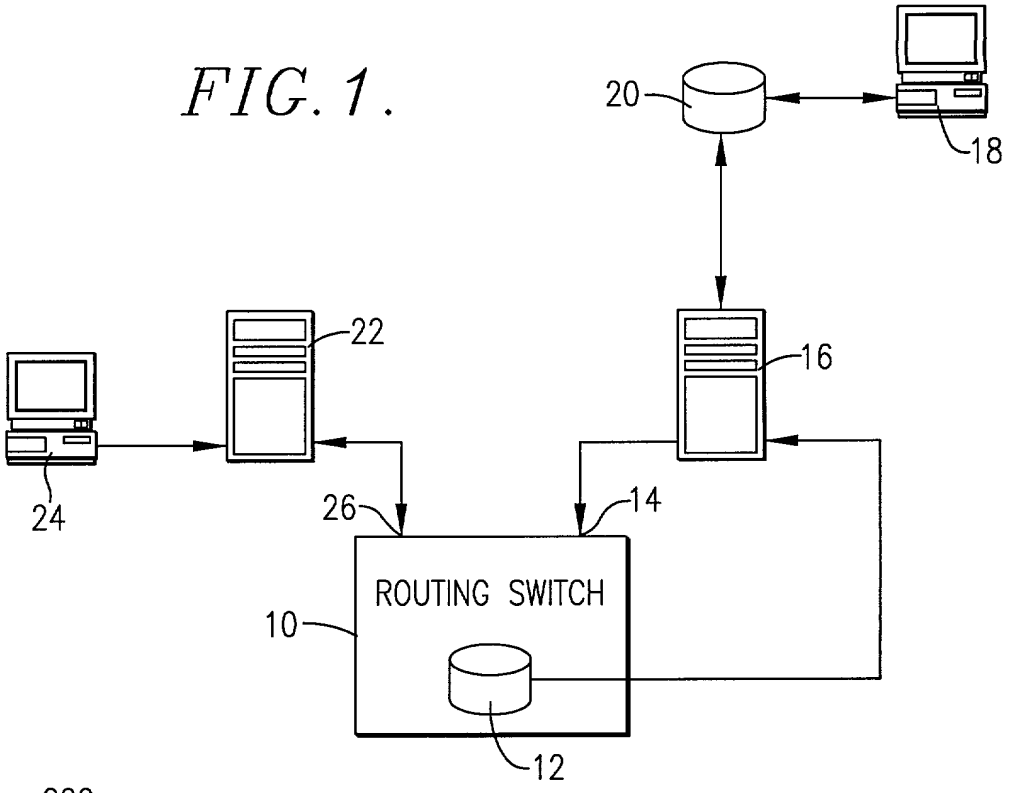
15. The system as set forth in claim 11, the server computer being further programmed to include a code segment for listing a plurality of voice-over-i.p. local routing switches that may be selected by the administrator.

16. The system as set forth in claim 11, the server computer being further programmed to include a code segment for permitting the administrator to search for information in the data table.

ABSTRACT OF THE DISCLOSURE

A computer program and method that allows direct access and modification of the data tables (12) in voice-over-i.p. local routing switches (10) so that administrators can more easily modify data and/or supplement data therein. The method and computer program permits an administrator to view a list of voice-over-i.p. local routing switches; select a switch from the list; view a list of data tables for the selected switch; select a data table from the list; search for and retrieve information in the data table; modify the information; and then upload the modifications to the switch by sending the modifications to an interface on the switch.

FIG. 1.


20
18
22
16
24
26
14
ROUTING SWITCH
10
12

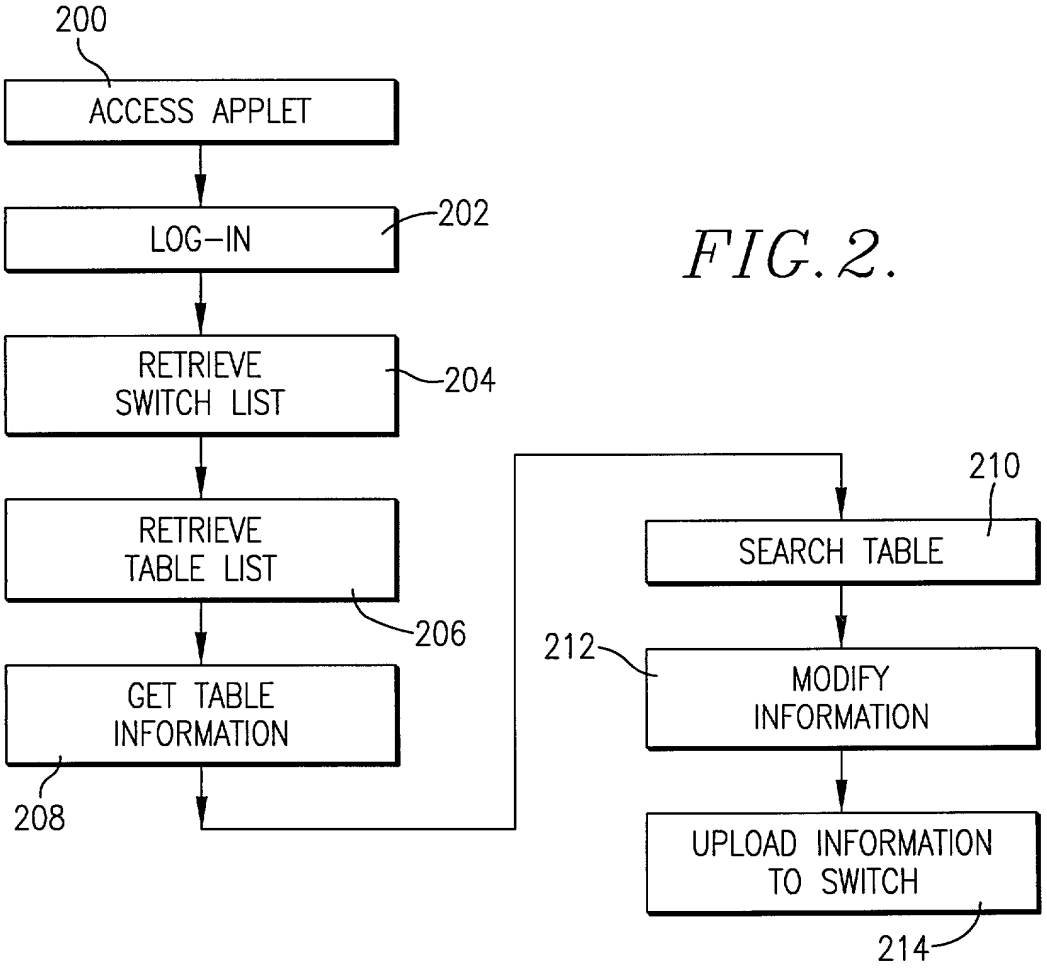

200
ACCESS APPLET
LOG–IN
202
RETRIEVE SWITCH LIST
204
RETRIEVE TABLE LIST
206
GET TABLE INFORMATION
208
210
SEARCH TABLE
212
MODIFY INFORMATION
UPLOAD INFORMATION TO SWITCH
214

FIG. 2.

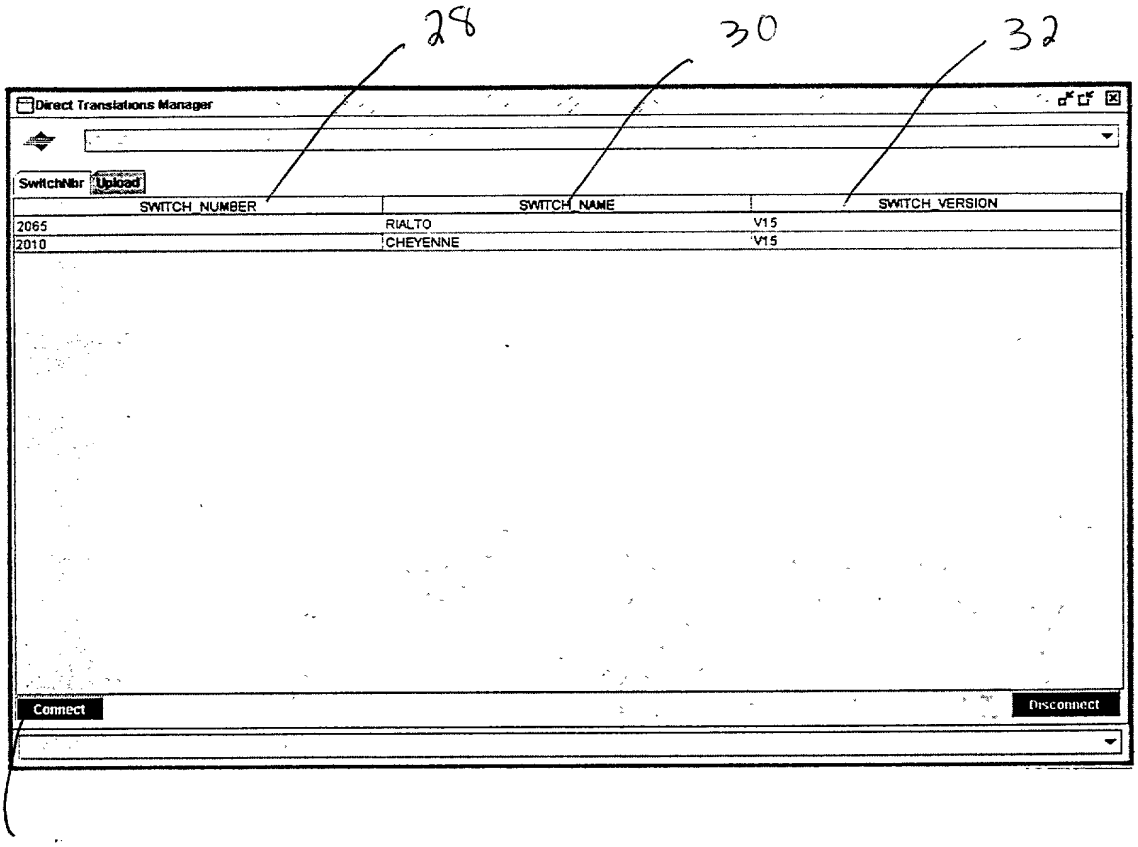

28
30
32
Direct Translations Manager
SwitchNbr
Upload
SWITCH_NUMBER
SWITCH_NAME
SWITCH_VERSION
2065
RIALTO
V15
2010
CHEYENNE
V15
Connect
Disconnect
34

Fig. 3

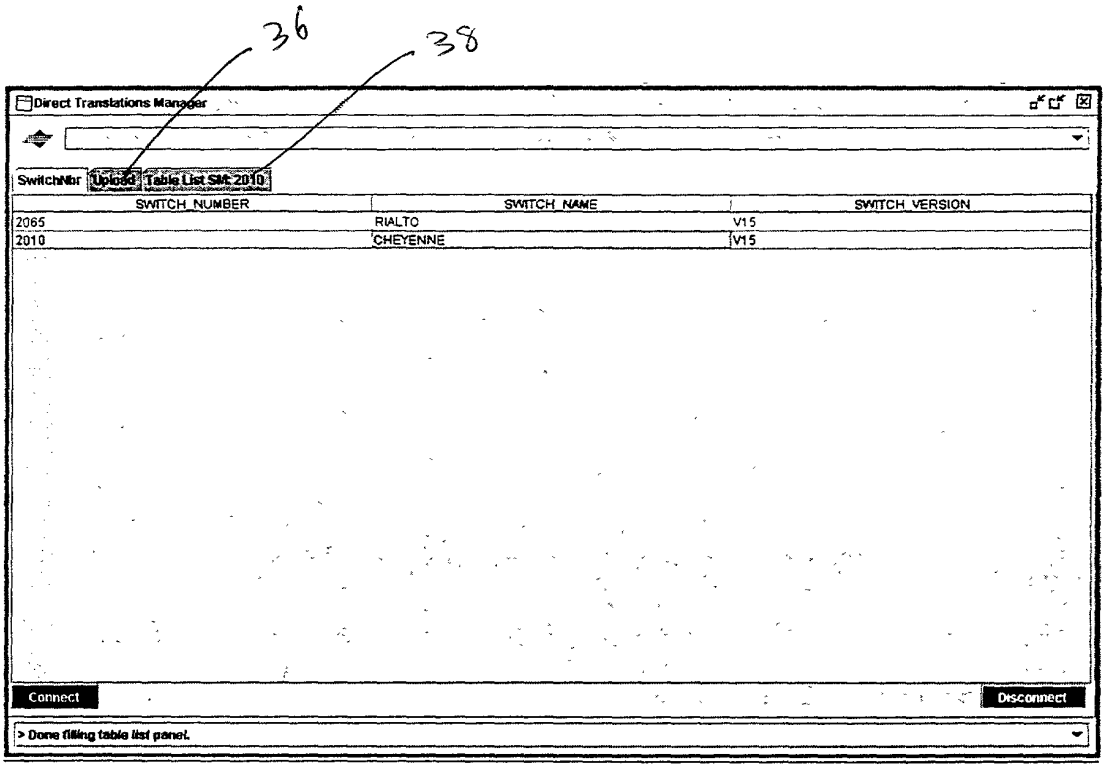

36
38
Direct Translations Manager
SwitchNbr
Upload
Table List SN: 2010
SWITCH_NUMBER
SWITCH_NAME
SWITCH_VERSION
2065
RIALTO
V15
2010
CHEYENNE
V15
Connect
Disconnect
> Done filling table list panel.

Fig. 4

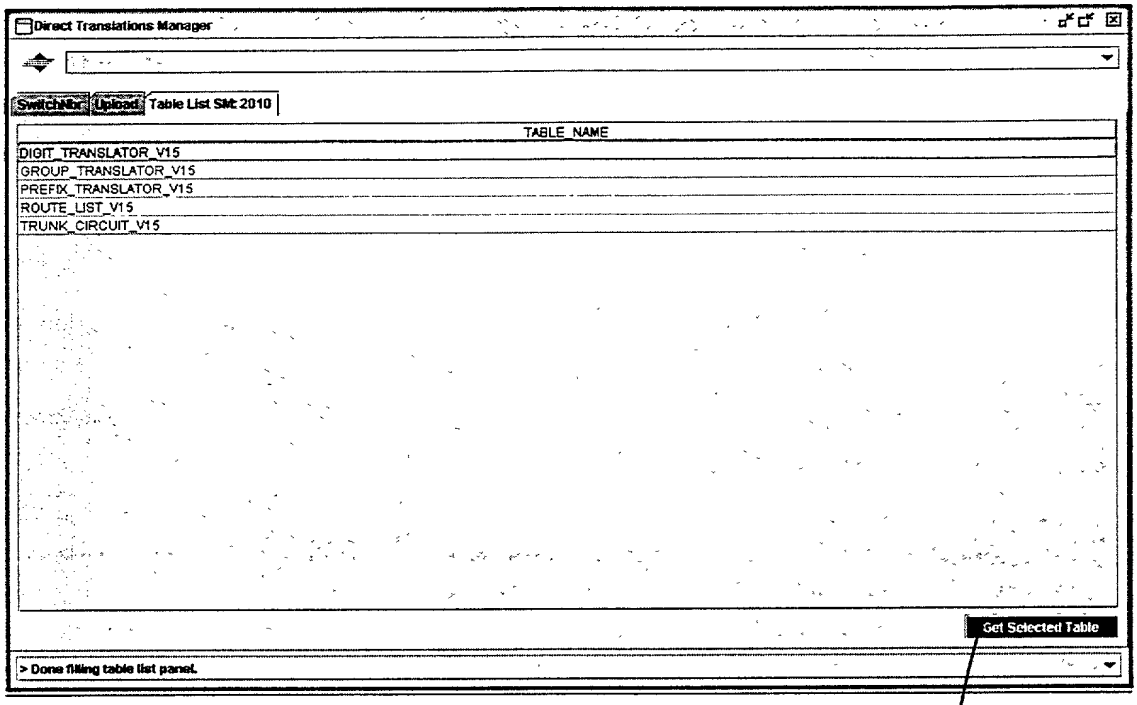

Direct Translations Manager
SwitchNbr
Upload
Table List Smt 2010
TABLE_NAME
DIGIT_TRANSLATOR_V15
GROUP_TRANSLATOR_V15
PREFIX_TRANSLATOR_V15
ROUTE_LIST_V15
TRUNK_CIRCUIT_V15
Get Selected Table
> Done filling table list panel.
40

Fig. 5

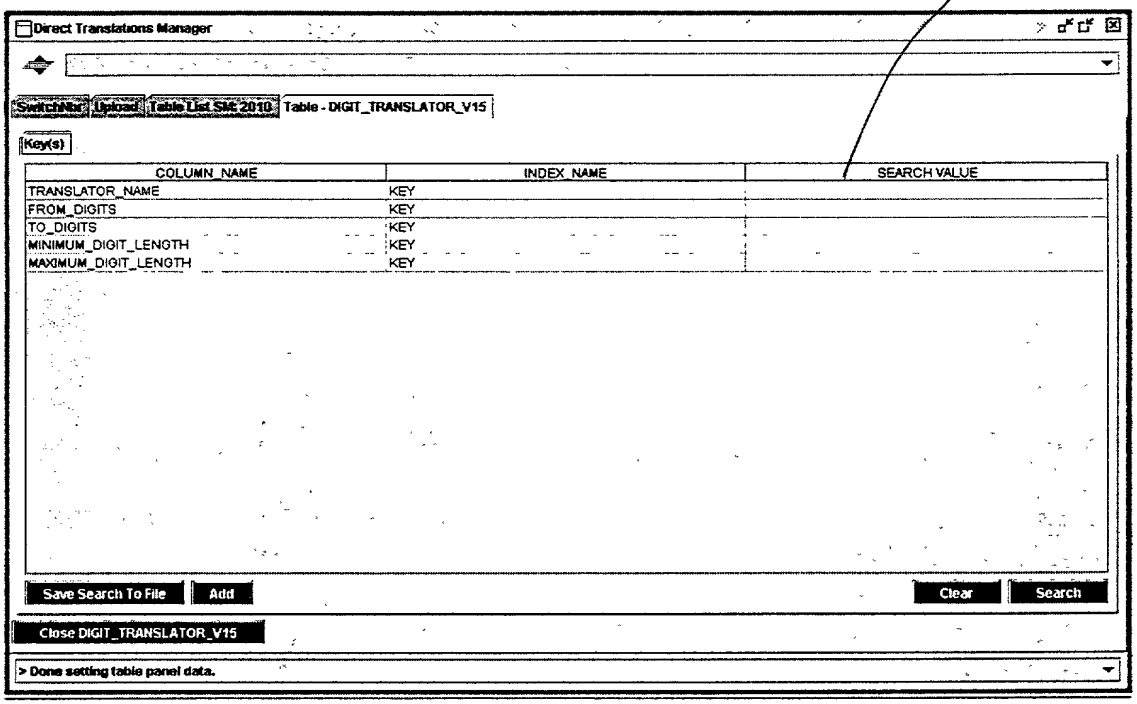

42
Direct Translations Manager
SwitchNet
Upload
Table List SMS 2010
Table - DIGIT_TRANSLATOR_V15
Key(s)
COLUMN_NAME
INDEX_NAME
SEARCH VALUE
TRANSLATOR_NAME
KEY
FROM_DIGITS
KEY
TO_DIGITS
KEY
MINIMUM_DIGIT_LENGTH
KEY
MAXIMUM_DIGIT_LENGTH
KEY
Save Search To File
Add
Clear
Search
Close DIGIT_TRANSLATOR_V15
> Done setting table panel data.

Fig. 6

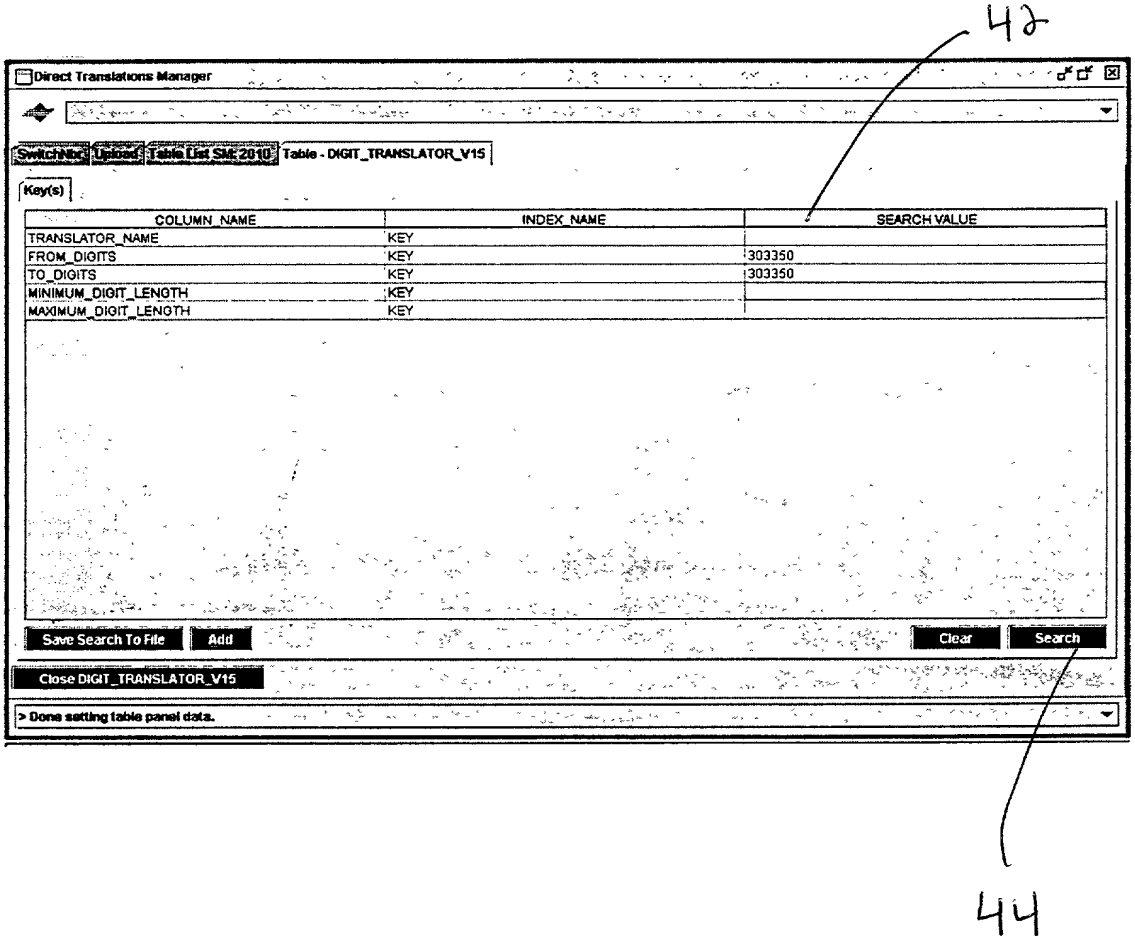
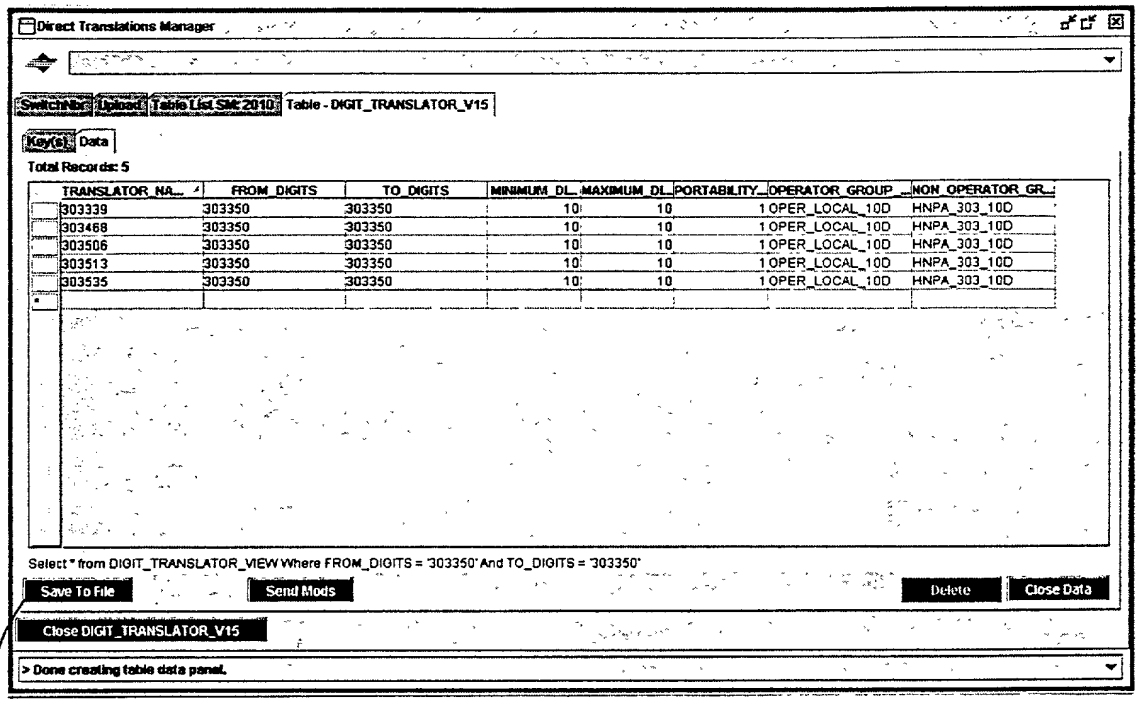

42
Direct Translations Manager
SwitchNbr
Upload
Table List SN: 2010
Table - DIGIT_TRANSLATOR_V15
Key(s)
COLUMN_NAME
INDEX_NAME
SEARCH VALUE
TRANSLATOR_NAME
KEY
FROM_DIGITS
KEY
303350
TO_DIGITS
KEY
303350
MINIMUM_DIGIT_LENGTH
KEY
MAXIMUM_DIGIT_LENGTH
KEY
Save Search To File
Add
Clear
Search
Close DIGIT_TRANSLATOR_V15
> Done setting table panel data.
44

Fig. 7


Direct Translations Manager
Switch Nbr
Upload
Table List SME 2010
Table - DIGIT_TRANSLATOR_V15
Key(s)
Data
Total Records: 5
TRANSLATOR_NA...
FROM_DIGITS
TO_DIGITS
MINIMUM_DL...
MAXIMUM_DL...
PORTABILITY...
OPERATOR_GROUP...
NON_OPERATOR_GR...
303339 303350 303350 10 10 1 OPER_LOCAL_10D HNPA_303_10D
303468 303350 303350 10 10 1 OPER_LOCAL_10D HNPA_303_10D
303506 303350 303350 10 10 1 OPER_LOCAL_10D HNPA_303_10D
303513 303350 303350 10 10 1 OPER_LOCAL_10D HNPA_303_10D
303535 303350 303350 10 10 1 OPER_LOCAL_10D HNPA_303_10D
Select * from DIGIT_TRANSLATOR_VIEW Where FROM_DIGITS = '303350' And TO_DIGITS = '303350'
Save To File
Send Mods
Delete
Close Data
Close DIGIT_TRANSLATOR_V15
> Done creating table data panel.

46

Fig. 8

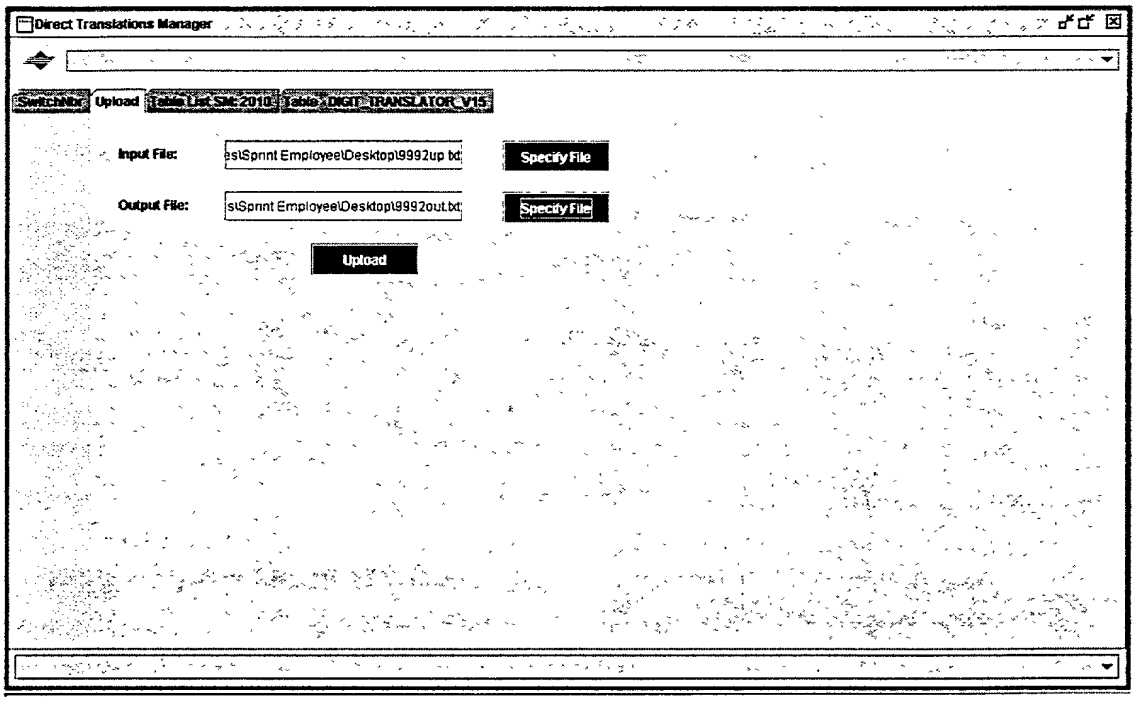

Direct Translations Manager
SwitchNbr
Upload
Table List Sitc 2010
Table XDIGIT_TRANSLATOR_V15
Input File:
es\Sprint Employee\Desktop\9992up.txt
Specify File
Output File:
s\Sprint Employee\Desktop\9992out.txt
Specify File
Upload

Fig. 9

Practitioner's Docket No. 30602 *PATENT*

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION, OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)

[X] original.
[ ] design.
[ ] supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

[ ] national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

NOTE: See 37 C.F R. § 1.63(d) (continued prosecution application) for use of a prior nonprovisional application declaration in the continuation or divisional application being filed on behalf of the same or fewer of the inventors named in the prior application.

[ ] divisional.
[ ] continuation.

NOTE: Where an application discloses and claims subject matter not disclosed in the prior application, or a continuation or divisional application names an inventor not named in the prior application, a continuation-in-part application must be filed under 37 C.F R § 1.53(b) (application filing requirements-nonprovisional application).

[ ] continuation-in-part (C-I-P).

INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor *(if only one name is listed below)* or an original, first and joint inventor

(if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

COMPUTER PROGRAM AND METHOD FOR MODIFYING DATA TABLES IN A TELECOMMUNICATIONS SWITCH

SPECIFICATION IDENTIFICATION

The specification of which:

(complete (a), (b), or (c))

(a) [X] is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 C.F.R. § 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed, or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) [ ] was filed on _____, as [ ] Application No. 0 / _____ or [ ] _____ and was amended on _____ *(if applicable).*

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 C F.R. § 1.67

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 C.F.R. § 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e g.,08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed,

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g.,08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60), M.P.E.P. § 601(a), 6th ed., rev.3.

(c) [ ] was described and claimed in PCT International Application No. _____ filed on _____ and as amended under PCT Article 19 on _____ *(if any)*.

SUPPLEMENTAL DECLARATION (37 C.F.R. § 1.67(b))

(complete the following where a supplemental declaration is being submitted)

[ ] I hereby declare that the subject matter of the

[ ] attached amendment
[ ] amendment filed on _____.

was part of my/our invention and was invented before the filing date of the original application, above identified, for such invention.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(also check the following items, if desired)

[ ] and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

[ ] in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 C.F.R. § 1.98.

PRIORITY CLAIM (35 U.S.C. § 119(a)-(d))

NOTE: "The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath or declaration as required by § 1.63. The claim for priority and the certified copy of the foreign application specified in 35 U.S.C. § 119(b) must be filed in the case of an interference (§ 1.630), when necessary to overcome the date of a reference relied upon by the examiner, when specifically required by the examiner, and in all other situations, before the patent is granted. If the claim for priority or the certified copy of the foreign application is filed after the date the issue fee is paid, it must be accompanied by a petition requesting entry and by the fee set forth in § 1.17(i). If the certified copy is not in the English language, a translation need not be filed except in the case of interference; or when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner, in which event an English language translation must be filed together with a statement that the translation of the certified copy is accurate." 37 C.F.R § 1.55(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) [X] no such applications have been filed.
(e) [ ] such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING DAY, **MONTH**, YEAR	PRIORITY CLAIMED UNDER 35 USC 119
			[ ]YES [ ]NO
			[ ]YES [ ]NO
			[ ]YES [ ]NO
			[ ]YES [ ]NO
			[ ]YES [ ]NO

CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(35 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER	FILING DATE
_____/_____	_____
_____/_____	_____
_____/_____	_____

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S) UNDER 35 U.S.C. § 120

[ ] The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

ALL FOREIGN APPLICATION(S), *IF ANY,* FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

_____

_____

_____

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

POWER OF ATTORNEY

I hereby appoint the following practitioner(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Robert D. Hovey	19,223	Andrew G. Colombo	40,565
Warren N. Williams	19,156	Scott R. Brown	40,535
Stephen D. Timmons	26,513	Tracy L. Bornman	42,347
John M. Collins	26,262	Tracey S. Truitt	43,205
Thomas H. Van Hoozer	32,761	Harley R. Ball	31,733
Thomas B. Luebbering	37,874	Steven J. Funk	35,875

(Check the following item, if applicable)

[ ] I hereby appoint the practitioner(s) associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

[ ] Attached, as part of this declaration and power of attorney, is the authorization of the above-named practitioner(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO
THOMAS B. LUEBBERING

DIRECT TELEPHONE CALLS TO:
(Name and telephone number)

[X] Address

THOMAS B. LUEBBERING
(816)474-9050

Attn: THOMAS B. LUEBBERING
HOVEY, WILLIAMS, TIMMONS & COLLINS
2405 Grand Boulevard, Suite 400
Kansas City, MO 64108-2519

[ ] Customer Number _____

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other document.

NOTE: Each inventor must be identified by full name, including the family name, and at least one given name without abbreviation together with any other given name or initial, and by his/her residence, post office address and country of citizenship. 37 C.F.R. § 1.63(a)(3).

NOTE: Inventors may execute separate declarations/oaths provided <u>each</u> declaration/oath sets forth all the inventors. Section 1.63(a)(3) requires that a declaration/oath, inter alia, identify each inventor and prohibits the execution of separate declarations/oaths which each sets forth only the name of the executing inventor. 62 Fed. Reg. 53,131, 53,142, October 10, 1997.

Full name of sole or first inventor

Bruce (*Given Name*) Edward (*Middle Initial or Name*) Ziegler (*Family (Or Last Name)*)

Inventor's signature Bruce Edward Ziegler

Date 9/25/00 **Country of Citizenship** United States of America

Residence 15040 W. 145th Terrace, Olathe, KS 66062

Post Office Address 15040 W. 145th Terrace, Olathe, KS 66062

■■■■■■

Full name of second joint inventor, if any

Daniel (*Given Name*) Christopher (*Middle Initial or Name*) Wieschhaus (*Family (Or Last Name)*)

Inventor's signature

Date 9/25/00 **Country of Citizenship** United States of America

Residence 4711 Noreston, Shawnee, KS 66226

Post Office Address 4711 Noreston, Shawnee, KS 66226

■■■■■■

Full name of third joint inventor, if any

Anthony (*Given Name*) Earl (*Middle Initial or Name*) Johnson (*Family (Or Last Name)*)

Inventor's signature Anthony Earl Johnson

Date 9/25/2000 **Country of Citizenship** United States of America

Residence 12611 Fountain Lake Drive, Grandview, MO 64030

Post Office Address 12611 Fountain Lake Drive, Grandview, MO 64030

■■■■■■

Full name of fourth joint inventor, if any

Igor	Mikhailovich	Dvoeglazov
(Given Name)	*(Middle Initial or Name)*	*Family (Or Last Name)*

Inventor's signature Igor Mikhailovich Dvoeglazov

Date 9/25/2000 **Country of Citizenship** Ukraine

Residence 4474 Oak Street, Apt. 931, Kansas City, MO 64112

Post Office Address 4474 Oak Street, Apt. 931, Kansas City, MO 64112

(check proper box(es) for any of the following added page(s) that form a part of this declaration)

[ ] **Signature** by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added* _____

* * *

[ ] **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 C.F.R. § 1.47. *Number of pages added* _____

* * *

[ ] Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 C.F.R. § 1.47)

* * *

[ ] Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

[ ] Number of pages added _____

* * *

[ ] Authorization of practitioner(s) to accept and follow instructions from representative.

(If no further pages form a part of this Declaration, then end this Declaration with this page and check the following item)

[X] This declaration ends with this page.